DOCUMENT RESUME

ED 263 716 EC 180 986

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TITLE Supplementary Services for Previously Nonpublic School Institutionalized Students, 1984-85. P.L. 89-313. Final Report.
INSTITUTION New York City Board of Education, Brooklyn. Office of Educational Assessment.
PUB DATE Aug 85
NOTE 63p.; Prepared by the Special Education Evaluation Unit. Evaluation Report. For related document, see EC 180 985.
PUB TYPE Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Disabilities; Elementary Secondary Education; *Equipment; *Instructional Materials; Program Descriptions; *Program Effectiveness; Program Evaluation
IDENTIFIERS New York

ABSTRACT

The report describes accomplishments of a program serving approximately 2500 handicapped students fomerly educated in New York state operated or supported schools. The program offered supplemental services to eligible students either through teacher training or through provision of materials and equipment. Curriculum areas in component 1 included reduction of maladaptive behavior, societal/survival skills, communication/language development, reading, mathematics, and career education. Component 2 provided instructional supplies and equipment in the areas of activities of daily living, career education, and communication/language development. Achievement data revealed that program objectives were at least partially met, with the majority of students acquiring at least one new skill during the course of the program in at least one of the following areas: activities of daily living, reduction of maladaptive behavior, societal/survival skills, communication/language development, career/pre-vocational education, or reading and mathematics. Observation and interviews indicated that the program-provided supplies and equipment generally met the students' needs and were preceived as effective supplements to basic instruction. The program reported an increase in students and materials and equipment compared with the previous year's cycle. Among conclusions formed are that the participant evaluation of workshops and other training activities should be expanded. (CL)

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P.L. 89-313
SUPPLEMENTARY SERVICES FOR PREVIOUSLY NONPUBLIC SCHOOL INSTITUTIONALIZED STUDENTS
1984-85

OEA Evaluation Report

Office of Educational Assessment
New York City Board of Education
110 Livingston Street
Brooklyn, New York 11201

EC 180986

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FINAL REPORT

August, 1985

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P.L. 89-313 SUPPLEMENTARY SERVICES FOR PREVIOUSLY NONPUBLIC SCHOOL INSTITUTIONALIZED STUDENTS 1984-85

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LC 3851.2 .N7 T67

Summary of The Report

During 1984-85, the Public Law 89-313 program, Supplementary Services for Previously Nonpublic-School Institutionalized Students reportedly served, according to the Division of Special Education (D.S.E.) records, approximately 2,500 students who were formerly educated in stateoperated or state-supported schools. Data retrieval forms were provided for approximately 1,930 students upon whom the analyses are based. The program consisted of the following components:

Component 1. Regional Services Instructional Support Unit

Component 2. Citywide Services Instructional Supplies and Equipment

According to achievement data, program objectives were at least partially met. The majority of students (92 percent) acquired at least one new skill during the course of the program in at least one of the following areas: activities of daily living, reduction of maladaptive behavior, societal/survival skills, communication/language development, career/pre-vocational education, reading, and mathematics. The average number of skills mastered by each student was just under seven. Observations and interviews indicated that the program-provided supplies and equipment generally met the needs of the students and were perceived as effective supplements to basic instruction.

Compared with Components 1 and 2 of the 1983-84 cycle, the program reported approximately 16 percent more students in the current cycle and provided 16 percent more supplementary materials and equipment. The D.S.E. reported that 22 teacher trainers were involved in the current cycle. Staff development reports were received from 16 trainers who reported that they provided workshops, consultations, and in-class demonstrations; they also assisted with the selection and use of the materials and equipment that were provided by the program.

Two of the components of the 1983-84 program cycle were replicated during 1984-85, allowing some direct comparisons. Component 1, Regional Instructional Support Unit, reported 659 students in the current cycle, approximately 100 fewer than the number reported last year. Both parts of the program objective were attained. Mean student mastery dropped from 12.1 skills per student last year to 10.1 skills per student this year.

Component 2, Citywide Services Instructional Supplies and Equipment, served 1,272 students, approximately 400 more than the number served last year, and provided almost one and one-half times as much materials and equipment. There was particular emphasis this year on communication, including augmentative communication skills and equipment. The program objective was partially met. The mean number of skills mastered was 4.6, compared with 4.1 in the 1983-84 cycle.

Both components suffered from some limitations, most significantly the identification and tracking of students via the Division of Special Education (D.S.E.) data bank, some delays in acquisition of materials and equipment, some inefficiency in ordering, and occasionally too little teacher input into the selection of materials and equipment.

The conclusions, based upon the findings of this evaluation, lead to the following recommendations:

- To guarantee that services are provided in the most propitious manner, efforts should be made to improve the identification and tracking of program-eligible students.
- There should be more extensive communication between the central administration of P.L. 89-313 and the program sites.
- Efforts to involve teaching and support staff in the selection of materials and equipment should be maintained and augmented.
- Where existing materials have been judged to be less than completely satisfactory, a concerted effort should be made to find and review alternate materials.
- To guarantee that purchased materials and equipment are used in the best possible way, a greater sharing of know ledge based on experience among personnel at different sites should be employed.
- To ensure continued effectiveness in the teacher training aspect of the program, participant evaluation of workshops and other training activities should be expanded.

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ACKNOWLEDGEMENT

In addition to those listed on the title page, a number of other people contributed to this evaluation effort. Chief among them were William Hilton who coordinated the data processing, and Lutisha Clark who was responsible for typing the final document, as well as its several drafts. Field consultants included Sheree West, Donna Eisenstadt, Susan Green, and Imogene Parker. Dina McClellan assisted by editing and Paul Cohen by analyzing interview data and proofreading.

I. INTRODUCTION

This report documents the Office of Educational Assessment's (O.E.A.) evaluation of the 1984-85 Public Law 89-313 program entitled Supplementary Services for Previously Nonpublic-School Institutionalized Students. This program was designed to provide supplemental services suited to the individual needs of participating students based upon their individualized educational plans (I.E.P.s) and in accordance with their learning styles and functional levels. The program, operated by the New York City Public Schools' Division of Special Education (D.S.E.) under an entitlement grant, provided materials, equipment, and teacher training for eligible students formerly educated in state-operated or state-supported schools.

The program was composed of two components, each serving a different population:

- Component 1. Regional Services Instructional Support Unit
- Component 2. Citywide Services Instructional Supplies and Equipment

GENERAL PROGRAM IMPLEMENTATION

This chapter describes the level of overall program implementation across both components. Data retrieval forms were received for 1,931 students at 310 sites.* These students ranged in age from five to 22 (having become 22 during the academic year). Of these students, approximately one-third were mentally retarded, slightly less than one-

*It is possible that the number of students and of program sites is greater than the numbers reported on data retrieval forms. D.S.E. records indicate that approximately 2,500 students were served.

fifth each were emotionally disturbed or multiple handicapped. The remainder were learning disabled, physically handicapped, autistic, speech impaired, or otherwise handicapped.

Facilities

The program served students in community elementary, intermediate, and junior high schools, residential and non-residential special education schools, occupational training centers, and a school for the deaf. O.E.A. field consultants reported that the facilities were appropriate for their intended instructional use. Classroom size was proper for the size of the group using it; lighting was adequate; furniture was suitable for the specific population and met the distinctive needs of the students.

Staff

According to D.S.E. reports, 22 teacher trainers wer hired. Staff development reports received from 16. All were experienced special education teachers and were knowledgeable about appropriate materials and equipment. Most were able to teach the correct use of the purchased supplies, equipment, and materials. One teacher of special education was assigned to central headquarters to coordinate the provision of instructional supplies and equipment and staff training activities. There was one educational paraprofessional who worked with students, staff, and parents at the School for the Deaf, qenerated additional instructional and training videotapes, and aided in the development of individual language objectives.

Level of Service

The program provided supplemental services to eligible students, either

through teacher training or through the provision of supplementary materials and equipment. The materials and equipment were selected to coincide with student needs and were intended to offer the students instructional support in one or more curriculum areas. According to reports received by O.E.A., The Instructional Support Unit, Component 1, provided 13 teacher trainers, divided among the five D.S.E. regions, to assist the teachers of 89-313 eligible students in providing the most effective instruction. In addition, instructional supplies and materials were provided for teacher use. Curriculum areas in Component 1 included reduction of maladaptive behavior, societal/survival skills, communication/language development, reading, mathematics, and career education. Component 2, Instructional Supplies and Equipment, provided instructional supplies and equipment in the curriculum areas of activities of daily living, career education, and communication/language development. The supplies and equipment were designed to enhance the education of the involved students. According to reports received by O.E.A., training of classroom teachers of program students was provided by three teacher trainers.

According to information provided in interviews and on data retrieval forms, the level of service provided varied among and within components. Service, for example, was delivered to students earlier in Component 1 than in Component 2. Teacher trainers interacted with more classroom teachers in Component 1, possibly because this component had more trainers. In Component 2 more staff wanted different types of materials for reading and for mathematics than those in current use. Similarly, more Component 2 than Component 1 staff desired less emphasis on academics. Comparable inconveniences occurred within components. As between components, these

needs and/or inconveniences were mild detractors from the program rather than obstacles to its success.

In most sections of this evaluation report, components are referred to by numerical designation. The arrangement of the chapters is as follows: Chapter II describes the program methodology. Chapter III presents an analysis of the qualitative and quantitative data for Component 1 specifically dealing with the areas of activities, materials/equipment, facilitating factors, inhibiting factors, and achievement data relevant to objective accomplishment; Chapter IV does the same for Component 2. Chapter V includes conclusions based upon the data, compares the findings of the present cycle with those of previous cycles, and offers recommendations based upon the results of the evaluation.

II. EVALUATION METHODOLOGY

EVALUATION QUESTIONS AND SCOPE

The evaluation addressed three primary areas: student achievement; teacher training; and instructional materials and equipment acquisition and use. Evaluation questions included the following:

- What proportion of students received materials and equipment and/or the benefits of training?
- What types of materials/equipment were purchased?
- What relationship, if any, exists between objective attainment and attendance?
- How many students mastered new skills?
- How many skills did they master?
- What proportion of students mastered at least three new skills in communication/language development, societal/survival skills, reduction of maladaptive behavior, career education, reading, and/or mathematics?
- What proportion of Component 1 students mastered at least 10 new objectives in one or more of the following curriculum areas: reduction of maladaptive behavior, societal/survival skills, communication/language development, reading, mathematics, career education?
- What proportion of Component 2 students mastered at least six new skills related to one or more of the following curriculum areas: activities of daily living, career education, communication/language development?

Component 1 served P.L. 89-313 eligible students in self-contained classrooms and in resource rooms in community schools; Component 2 served P.L. 89-313 eligible students in low-incidence programs and special schools operated by D.S.E.'s Office of Citywide Programs.

Quantitative data were collected on O.E.A.-developed data retrieval forms and included general program information, as well as individual student data and achievement information.

Qualitative data were collected by O.E.A. field consultants during 60 site visits, to approximately one-fifth of all program sites. Almost two hundred staff interviews and classroom observations were conducted. Site selection was carried out in such a way that all regions/boroughs were represented, as were types of classes. Classes were chosen by type so as to approximate the proportion in each region/borough in which they actually could be found.

SAMPLE

Data retrieval forms were given to all teachers of P.L. 89-313 eligible students. Interviews and observations were carried on in approximately 20 percent of the program sites. Sample selection took into account a number of factors so as to make the sample closely resemble the population itself. These factors were: region (or borough), handicapping condition, type of program, level (elementary, intermediate, junior high).

INSTRUMENTS

Data retrieval forms were developed for special education teachers in order to obtain information on the program, the students, and on specific student achievement. Interview schedules were developed for special education teachers, teacher trainers, and principals in order to gain information about program implementation and operation.

III. EVALUATION FINDINGS: COMPONENT 1. REGIONAL SERVICES

PARTICIPATING STUDENTS

The activities of Component 1, the Instructional Support Unit, were intended to provide staff development, instructional materials, and supplies to supplement the educational program of participating students. Data retrieval forms were returned to O.E.A. for 659 students at 240 sites in the five D.S.E. regions. There were from one to 19 program-eligible students at each site. Sixty-seven percent of these students were enrolled in elementary schools; 13 percent were enrolled in intermediate schools; 20 percent were enrolled in junior high schools. Thus, twice as many students were at the elementary school level as were at the intermediate and junior high levels combined. The age range of the P.L. 89-313 eligible students was five to 19 years and averaged 11 years. Handicapping conditions included mental retardation (35 percent), specific learning disability (27 percent), physically handicapped (15 percent), emotionally disturbed (11 percent), multiple handicapped (one percent), and other handicapping conditions (10 percent). Almost all students began receiving program services by November.

COMPONENT IMPLEMENTATION

Training

The regional component of P.L. 89-313 was implemented in the following way: Teacher trainers located eligible students and contacted their classroom teachers. They discussed supplemental instruction materials and training

needs. After consulting with the classroom teachers and possibly with supervisory staff, the teacher trainers selected those materials which would aid in the accomplishment of objectives stated in the students' I.E.P.s. The trainers arranged to make the selected materials available to the classroom teachers. Staff training was provided by teacher trainers, both upon the request of the classroom teachers and on their own initiative. All trainers interviewed reported that they had provided training in the form of workshops as well as on an individual basis. Small group meetings were also mentioned as a popular form of training.

Site visits were made for the purpose of assisting teachers with classroom problems, teaching techniques of behavior management, selecting and demonstrating the use of materials and equipment, evaluating materials, and keeping records on individual children. Frequently, trainers claimed that they focused their efforts on new teachers.

Teacher trainers emphasized both the selection and use of instructional materials which would supplement the educational programs of eligible students and the staff development of classroom teachers. As of April 30, 1985, teacher trainers reported that they had provided 5,138 hours of training in 2,063 training sessions. Included in this training were in-class assistance, individual classroom teacher consultation, in-class demonstration lessons, and group workshops.

Training sessions involved academic topics as well as general pedagogical concerns. Twenty-six percent of the hours of training dealt with reading; 20 percent involved mathematics. Thus, the greatest amount of time was devoted to academic areas. Fourteen percent of the hours were devoted to

program implementation and 13 percent to behavior management. The other 27 percent were divided among various instructional concerns such as language/communication, activities of daily living, reduction of maladaptive behavior, societal/survival skills, and career education.

O.E.A. received staff development reports from 13 teacher trainers assigned to the five D.S.E. regions. There were two in Manhattan, three in the Bronx, two in Brooklyn West, three in Brooklyn East (which included Staten Island), and three in Queens. Teacher trainers began working with classroom teachers in September.

Materials/Equipment

Interviews with 56 classoom teachers of eligible students at 31 sites indicated that 73 percent of the teachers had been consulted concerning the selection of program materials. All of the teachers interviewed reported having received materials; approximately 30 percent received these materials in the fall and all of the remaining 70 percent had received them by May.

Materials which were reported as being particularly useful included Developmental Learning Materials (D.L.M.), rexographs, cuisinaire rods, attainment kits, language aids, the Hi Lo reading series, math activity kits, and Science Research Associates reading materials. These materials were cited as beneficial for the following reasons: they reinforce skills; help students achieve goals; augment student interest; improve behavior and scholastic ability; give practice to fine-motor coordination; teach concepts; and enrich experience. D.L.M. materials were judged to be the most useful, followed by manipulatives, Talking-Machine typewriters, and Tutor-Grams. Eighty-two percent of teachers interviewed said that the students benefited from the materials.

Data retrieval forms, completed by classroom teachers for each program-eligible student, indicated that the teachers of 96 percent of the students had received materials and/or training. The classroom teachers of 66 percent of the students received reading materials and the teachers of slightly over 55 percent received materials in mathematics. The percent of students receiving the benefits of training in the academic areas of reading and math was also comparatively high (39.5 and 35.5 percent respectively). See Table 1 for a complete presentation of the materials and training received by teachers of P.L. 89-313 students.

Compared with the 83-84 program cycle, it can be seen that there were similar percentages of students receiving materials in specific curriculum areas with the following exceptions: Life skills was not included in the current program cycle and in the previous cycle a greater percentage of students received materials in mathematics and career education. Training in the current cycle in reading and math affected a greater percentage of students than were affected by training in those areas last year.

PERCEIVED EFFECTIVENESS OF ACTIVITIES

Facilitating Activities

The Regional Instructional Support Unit provided instructional supplies, equipment, textbooks, and other materials to supplement the regular educational programs of 89-313 eligible students. In addition, it provided training in the use of the materials and equipment so that teachers could provide the most effective education consistent with each student's I.E.P. Teachers reported that there was observable improvement in the areas of academic, social, and motor skills. Ninety-two percent of the teacher

Table 1

Numbers and Relative Percentages of Component 1 Students Who Received Materials and Training by Curriculum Area (N = 659 Students)

Curriculum Area	Type of Service	
	Materials (Percent)	Training (Percent)
Reading	435 (66.0)	260 (39.5)
Mathematics	364 (55.2)	234 (35.5)
Career Education	68 (10.3)	55 (8.3)
Other	270 (41.0)	281 (42.6)

Note. The column entries represent the numbers and percentages of students receiving either materials or training. Some students benefited from both types of services.

- Materials were most often provided to students in the areas of reading and mathematics.
- Training was most often provided in reading, mathematics, and diverse curriculum areas.

trainers (N=13) stated that students significantly gained in such academic areas as reading and math, increased their social and life skills, and were motivated by the 89-313 materials. Principals (N=31) expressed the observation that many of the positive effects of the project could be attributed to the input of the teacher trainer, the large variety of extra materials, and the positive learning environment which was created.

Inhibiting Factors

Execution of Component 1 was hampered by a less than totally effective system of referral and tracking of eligible students. Administrators frequently stated that eligible students were unable to receive P.L. 89-313 services because the information in the data bank was not kept up to date. Record keeping, dealing with the location of students and the supplies and equipment which had been ordered for them, was not optimally maintained. Materials, and particularly equipment, were sometimes not delivered quickly. When this happened students were not able to fully benefit from what had been purchased. Some teachers would have preferred that teacher trainers receive more orientation to better acquaint them with the needs of the teachers in providing the best education for their students. Teacher trainers also felt that new teacher trainers would benefit from an orientation period. A number of teachers expressed dissatisfaction with the Comprehensive Instructional Management System (CIMS). They reported that it did not provide adequate reinforcement for many of the children with whom it was used. Some teachers expressed similiar dissatisfaction with the Behavioral Characteristics Progression (B.C.P.). They mentioned the mastery steps as being too small for realistic use in the classroom. Frequently, satisfaction

with the B.C.P. was determined by the functional level of the student for whom it was a criterion referenced test. A number of staff suggested that a closer relationship with the central management of P.L. 89-313 would be beneficial. They stated that uniform means of requesting help and of receiving feedback would then be made possible. Finally, an impediment mentioned by teacher trainers and by some teachers was that there was a lack of clerical assistance. They felt that with the quantity of materials they had to produce, additional clerical assistance was a necessity.

ACHIEVEMENT DATA

Student performance was evaluated with four criterion referenced tests. Each was used with the intention of assessing the mastery of I.E.P. skills taught with the supplemental assistance of P.L. 89-313 purchased material, equipment, and teacher training. The Individualized Criterion Referenced Test (I.C.R.T.) assessed student attainment of reading skills; the Comprehensive Instructional Management System (CIMS) measured skills in mathematics; the Career Education/Prevocational Skills Assessment Inventory measured student achievement in career education. Progress was gauged by the Behavioral Characteristics Progression (B.C.P.), also known as VORT, in a variety of curriculum areas: maladaptive behavior (strands 23-26, 29); societal/survival (strands 31-33, 42-45); communication/language (strands 18-22, 30, 46-48, 57, 58); and secondarily, career education (strands 25, 26, 33, 39, 42-44); reading (strands 34); and mathematics (strands 35, 36). Data retrieval forms were designed so that teachers might itemize a maximum of 12 I.E.P. objectives in each main catergory.

For the purpose of determining program success, and in accordance

with the proposal, only those students who had received a minimum of 20 days of service were included in the computation of mastery data.

The criteria for the attainment of the program's objective were as follows:

- Eighty percent of participating students will demonstrate mastery of a minimum of three new skills and 50 percent will demonstrate mastery of a minimum of 10 new skills consistent with each students's I.E.P. short term objectives in one or more of the following curriculum areas: maladaptive behavior; societal/survival; reading; mathematics; communication/language development; career education.

Performance data were examined in a number of ways. As a confirmation of the selection of an attendance cut-off of 20 sessions, the achievement data of those students attending fewer that 20 sessions were examined. It was found that 80 percent mastered no skills measured by any of the criterion referenced tests as shown in Table 2. This served to support the validity of the attendance criterion. A frequency distribution of attendance is presented in Table 3. Seven percent of the Component 1 students attended fewer that 20 sessions. The average number of sessions attended was 107.

In addition to the attendance criterion, a number of other factors were considered in determining if an individual student records should be included in the analysis. The program objective, as stated above, specifically says "consistent with each student's I.E.P. short-term objectives." Additionally, the data retrieval form instructions indicate that the teacher should only record objectives (and ultimately the students' mastery or lack thereof) if they meet the following criteria:

Table 2

Frequency Distribution of Total Objectives[a] Mastered Across Instructional Areas for Component 1 Students Attending Fewer Than Twenty Sessions (N = 46)

Number of Skills Mastered	Number of Students	Percent of Population[b]	Cumulative Percent
21-25	3	6.5	6.5
16-20	0	0	6.5
11-15	0	0	6.5
6-10	4	8.7	15.2
1-5	2	4.3	19.6
0	37	80.4	100.0
		99.9[c]	

[a]All objectives in areas of maladaptive behavior, societal/survival, communication/language development, reading, mathematics, career education.

[b]Baseline comprised of Component 1 students for whom data were reported in any instructional area.

[c]Total does not equal 100 percent because of rounding.

- Of those students attending fewer than 20 sessions, 80.4 percent mastered no new skills.

Table 3

Percentage of Component 1 Students
by Attendance Blocks
(N = 648)

Sessions Attended[a]	Number of Students	Percent of Population[b]
140-159	151	23.3
120-139	177	27.3
100-119	97	15.0
80-99	115	17.7
60-79	37	5.7
40-59	13	2.0
20-39	12	1.9
under 20	46	7.1
		100.0

[a]Number of sessions attended in any curriculum area.

[b]Baseline comprised of Component 1 students for whom data were reported.

- Mean number of days attended by participating students was 107.
- The range of sessions attended was 0 to 155.
- Seven percent of the population attended fewer than 20 sessions.

- objective was not previously mastered.
- objective was selected for the students' P.L. 89-313 instructional program.

For that reason it was deemed prudent to assess the accomplishment of three objectives only for those students who had been given at least three objectives to master. If students were asked to master only one 89-313 objective, it would be invalid to say that objective accomplishment did not occur because three objectives were not attempted. Similarly, only students who were given at least ten objectives were included in the second analysis; i.e. mastery of ten objectives.

B.C.P. Skill Objectives

Examination of student mastery of B.C.P. objectives was carried out in order to determine whether the objectives concerning reduction in maladaptive behavior, growth in societal/survival skills, and communication/language development had been realized. A frequency distribution including the scores of those students who had attempted at least three objectives is presented in Table 4. Since the data retrieval forms allowed only for the inclusion of 12 objectives for each test, no more than that number appears on any table involving a single instrument. While the objective of 80 percent of the student mastering at least three skills was not reached for the total B.C.P., it should be noted that the objective was nearly attained. Of the 144 students with at least three B.C.P. objectives, 70 percent mastered at least three. Only 43 students mastered fewer than three objectives. The average number of objectives attained by students taught at least three new skills was over four. It should also be noted

TABLE 4

Frequency Distribution of Mastery of
B.C.P. Objectives by Component 1 Students
Taught at Least Three Skills[a]
(N = 144)

Number of Skills Mastered	Number of Students	Percent of[b] Population	Cumulative Percent
12+	8	5.6	5.6
11	3	2.1	7.6
10	2	1.4	9.0
9	4	2.8	11.8
8	6	4.2	16.0
7	5	3.5	19.4
6	10	6.9	26.4
5	13	9.0	35.4
4	15	10.4	45.8
3	35	24.3	70.1
2	15	10.4	80.6
1	9	6.2	86.8
0	19	13.2	100.0
		100.0	

[a]B.C.P. objectives in the areas of maladaptive behavior, societal/survival, communication/language development.

[b]Baseline comprised of Component 1 students taught at least three skills in any curriculum area.

- At least three new B.C.P. objectives were mastered by 70.1 percent of the students.

that at least 50 percent of involved students mastered at least two objectives in each of the specific B.C.P. strands, and 80 percent mastered at least two objectives in the total B.C.P.

As for the criterion that 50 percent of the students demonstrate mastery of at least ten new skills, a frequency distribution of the B.C.P. data for those students attempting at least ten objectives is presented in Table 5. The program objective was attained for the total B.C.P. (all areas included). Fifty-two percent of the students mastered at least ten skills.

I.C.R.T. Skill Objectives

A compilation of attained I.C.R.T. objectives was completed to evaluate objective attainment in the area of reading. Table 6 presents the data for those students undertaking at least three objectives. The program objective was realized as almost 89 percent of those 407 students attained a minimum of three objectives. Seventy-two students endeavored to acquire at least ten new skills. Of those students, over 62 percent attained at least ten objectives, signifying accomplishment of the program objective that 50 percent would attain at least ten objectives. (See Table 7.)

CIMS Skill Objectives

In order to appraise the accomplishment of the objective for mathematics, the results of the CIMS data were analyzed. Data from students attempting at least three new skills are presented in Table 8. The program objective for those attempting three objectives was accomplished as over 82 percent of the 408 students involved mastered at least three new skills. Table 9 presents the frequency distribution for students undertaking at least ten objectives.

Table 5

Frequency Distribution of Mastery of B.C.P. Objectives[a] by Component 1 Students Undertaking at Least Ten Objectives (N = 25)

Number of Skills Mastered	Number of Students	Percent of Population[b]	Cumulative Percent
12+	8	32.0	32.0
11	3	12.0	44.0
10	2	8.0	52.0
9	2	8.0	60.0
8	2	8.0	68.0
7	2	8.0	76.0
6	2	8.0	84.0
5	2	8.0	92.0
4	0	0	92.0
3	1	4.0	96.0
2	1	4.0	100.0
1	0	0	
0	0	0	
		100.0	

[a]B.C.P. objectives in the areas of maladaptive behavior, societal/survival, communication/language development.

[b]Baseline comprised of Component 1 students taught at least ten skills in any curriculum area.

- At least ten new B.C.P. objectives were mastered by 52 percent of the students.

Table 6

Frequency Distribution of Mastery of Objectives[a] in Reading by Component 1 Students Who Attempted at Least Three Objectives (N = 407)

Number of Skills Mastered	Number of Students	Percent of Population[b]	Cumulative Percent
12	10	2.4	2.4
11	19	4.7	7.1
10	18	4.4	11.5
9	23	5.6	17.1
8	18	4.4	21.5
7	32	7.9	29.4
6	45	11.1	40.5
5	37	9.1	49.6
4	94	23.1	72.7
3	65	16.0	88.7
2	22	5.4	94.1
1	13	3.2	97.3
0	11	2.7	100.0
		100.0	

[a] I.C.R.T. and VORT (B.C.P.) strand 34.

[b] Baseline comprised of Component 1 students taught at least three reading skills.

- Almost 89 percent of the students mastered three new reading skills.

Table 7

Frequency Distribution of Mastery of Objectives[a] in Reading by Component 1 Students Who Attempted at Least Ten Objectives (N = 72)

Number of Skills Mastered	Number of Students	Percent of Population[b]	Cumulative Percent
12	10	13.9	13.9
11	17	23.6	37.5
10	18	25.0	62.4
9	9	12.5	74.9
8	4	5.6	80.5
7	3	4.2	84.7
6	4	5.6	90.3
5	5	6.9	97.2
4	0	0	97.2
3	1	1.4	98.6
2	0	0	98.6
1	0	0	98.6
0	1	1.4	100.0
		100.1[c]	

[a]I.C.R.T. and VORT (B.C.P.) strand 34.

[b]Baseline comprised of Component 1 students taught at least ten reading skills.

[c]Total does not equal 100 percent because of rounding.

- Over 62 percent of the students mastered at least ten new reading skills.

Table 8

Frequency Distribution of Mastery of Objectives[a] in Mathematics by Component 1 Students Who Attempted at Least Three Objectives (N = 408)

Number of Skills Mastered	Number of Students	Percent of Population[b]	Cumulative Percent
12	1	0.2	0.2
11	21	5.1	5.4
10	3	0.7	6.1
9	18	4.4	10.5
8	24	5.9	16.4
7	33	8.1	24.5
6	43	10.5	35.0
5	29	7.1	42.1
4	85	20.8	63.0
3	80	19.6	82.6
2	23	5.6	88.2
1	20	4.9	93.1
0	28	6.9	100.0
		99.8[c]	

[a]CIMS and VORT (B.C.P.) strands 35 and 36.

[b]Baseline comprised of Component 1 students taught at least three mathematics skills.

[c]Total does not equal 100 percent because of rounding.

- Over 82 percent of the students mastered at least three new math skills.

Table 9

Frequency Distribution of Mastery of Objectives[a] in Mathematics by Component 1 Students Who Attempted at Least Ten Objectives (N = 53)

Number of Skills Mastered	Number of Students	Percent of Population[b]	Cumulative Percent
12	1	1.9	1.9
11	19	35.8	37.7
10	3	5.7	43.4
9	7	13.2	56.6
8	4	7.5	64.1
7	6	11.3	75.4
6	5	9.4	84.8
5	3	5.7	90.5
4	2	3.8	94.3
3	1	1.9	96.2
2	0	0	96.2
1	0	0	96.2
0	2	3.8	100.0
		100.0	

[a]CIMS and VORT (B.C.P.) strands 35 and 36.

[b]Baseline comprised of Component 1 students taught at least ten mathematics skills.

- Over 43 percent of the students mastered at least ten new math skills.

The program objective was not reached in this case: 43 percent of the 53 students mastered ten new skills; as compared to the projected 50 percent. The average number of math skills learned by these students was 8.4.

Career Education Pre-vocational Skill Objectives

To discover whether the objective for student achievement in career education was achieved a frequency distribution of results on the Career Education/Pre-vocational Skills Assessment was completed. Data based on those students undertaking at least three objectives are presented in Table 10. Almost 96 percent of these 212 students mastered at least three objectives. Accordingly, the program objective was met. It was not possible to test the second part of the program objective since only three students were reported as attempting 10 skills.

Overall Attainment

To assess the comprehensive impact of Component 1 on student achievement, O.E.A. examined total objective mastery across all subject areas. The students on whom individual achievement data were reported mastered an average of 9.7 skills. Over 93 percent of the 602 students mastered at least one new skill, and 50 percent mastered almost 10 new skills. These figures are presented in Table 11. In Table 12, the data based upon the skill mastery of students who were taught at least three skills are presented. Over 90 percent of these 583 students attained at least three skills. The program objective was therefore met. Data from the 160 students taught at least ten skills are presented in Table 13. Over fifty-six percent learned at least ten new skills, indicating that

Table 10

Frequency Distribution of Mastery of Objectives[a] in Career/Pre-vocational Education by Component 1 Students Who Attempted at Least Three Objectives (N = 212)

Number of Skills Mastered	Number of Students	Percent of Population[b]	Cumulative Percent
12	1	0.5	0.5
11	1	0.5	0.9
10	0	0	0.9
9	4	1.9	2.8
8	5	2.4	5.2
7	9	4.2	9.4
6	23	10.8	20.2
5	26	12.3	32.5
4	79	37.3	69.8
3	55	25.9	95.7
2	5	2.4	98.1
1	0	0	98.1
0	4	1.9	100.0
		100.1[c]	

[a]Career Education/Pre-vocational Skills Assessment Inventory and VORT (B.C.P.) strands 25, 26, 33, 39, and 42-45.

[b]Baseline comprised of Component 1 students taught at least three career skills.

[c]Total does not equal 100 percent because of rounding.

- Almost 96 percent of the students mastered three career skills.

Table 11

Frequency Distribution of Total Objectives[a]
Mastered in All Areas by Component 1 Students
Who Attended at Least Twenty Sessions
(N = 602)

Number of Skills	Number of Students	Percent of Population[b]	Cumulative Percent
29-30	3	0.5	0.5
27-28	1	0.2	0.7
25-26	7	1.2	1.8
23-24	17	2.8	4.6
21-22	20	3.3	8.0
19-20	13	2.2	10.1
17-18	21	3.5	13.6
15-16	39	6.5	20.1
13-14	43	7.1	27.2
11-12	95	15.8	43.0
9-10	65	10.8	53.8
7-8	60	10.0	63.8
5-6	93	15.4	79.2
3-4	55	9.1	88.4
1-2	28	4.6	93.0
0	42	7.0	100.0
		100.0	

[a]All objectives in areas of maladaptive behavior, societal/survival, communication/language development, reading, mathematics, career education.

[b]Baseline comprised of Component 1 students for whom data were reported in any curriculum area.

- At least three objectives in any academic area were attained by 88.4 percent of the students.
- At least ten objectives in any academic area were attained by 47.2 percent of the students.

Table 12

Frequency Distribution of Total Objectives[a]
Mastered in All Areas by Component 1 Students
Who Attempted at Least Three Objectives
(N = 583)

Number of Skills	Number of Students	Percent of Population[b]	Cumulative Percent
29-30	3	0.5	0.5
27-28	1	0.2	0.7
25-26	7	1.2	1.9
23-24	17	2.9	4.8
21-22	20	3.4	8.2
19-20	13	2.2	10.5
17-18	21	3.6	14.1
15-16	39	6.7	20.8
13-14	43	7.4	28.1
11-12	95	16.3	44.4
9-10	65	11.1	55.6
7-8	60	10.3	65.9
5-6	92	15.8	81.6
3-4	50	8.6	90.2
1-2	20	3.4	93.7
0	37	6.3	100.0
		99.9[c]	

[a]All objectives in areas of maladaptive behavior, societal/survival, communication/language development, reading, mathematics, and/or career education.

[b]Baseline comprised of Component 1 students taught at least three skills in any curriculum area.

[c]Total does not equal 100 percent because of rounding.

- At least three objectives in any academic area were attained by 90.2 percent of the students.

Table 13

Frequency Distribution of Total Objectives[a]
Mastered in All Areas by Component 1 Students
Who Attempted at Least Ten Objectives
(N = 160)

Number of Skills	Number of Students	Percent of Population[b]	Cumulative Percent
29-30	3	1.9	1.9
27-28	1	0.6	2.5
25-26	6	3.8	6.2
23-24	10	6.2	12.5
21-22	12	7.5	20.0
19-20	3	1.9	21.9
17-18	6	3.8	25.6
15-16	12	7.5	33.1
13-14	13	8.1	41.2
11-12	16	10.0	51.2
9-10	13	8.1	59.4
7-8	11	6.9	66.2
5-6	26	16.2	82.5
3-4	8	5.0	87.5
1-2	8	5.0	92.5
0	12	7.5	100.0
		100.0	

[a]All objectives in areas of maladaptive behavior, societal/survival, communication/language development, reading, mathematics, and/or career education.

[b]Baseline comprised of Component 1 students taught at least ten skills.

- At least ten objectives in any academic area were attained by 56.2 percent of the students.

the program objective relating to the attainment of ten skills was also met. Thus, total academic gains were in evidence across all subject areas.

IV. EVALUATION FINDINGS: COMPONENT 2. CITYWIDE SERVICES

PARTICIPATING STUDENTS

Component 2 provided supplementary supplies and equipment to 1,272 students in 65 special schools and programs operated centrally, as reported to O.E.A. The target population ranged in age from five to 21 years. Participants evidenced a number of severe and low incidence handicapping conditions, specifically: mental retardation (29 percent); multiple handicaps (27 percent); emotional handicaps (23 percent); autism (10 percent); visual handicaps, deafness, speech and language impairment, and others (11 percent). Students were enrolled in a great variety of programs, including Track IV (19 percent), Centers for Multiple Handicapped--C.M.H.C. (15 percent), Occupational and Adult Skills Training Centers and Centers for Career Development (15 percent), Day Treatment (11 percent), Autistic (10 percent), and Teacher Moms (9 percent). The remaining 21 percent were distributed among the following Citywide Services: Schools for Language and Hearing-Impaired Children (SLHIC), Day Schools, Hospital and Homebound Instruction, Speech Services Unit, School for the Deaf, and Special Instructional Environment (S.I.E.) I, II, IV, and V (Intensive Physical Adaptations/ Functional Life Skills, Habilitation with Physical Adaptations, Career Education, and Occupational Education Skills, respectively).

COMPONENT IMPLEMENTATION

While targeted curriculum areas included activities of daily living and pre-vocational/career education, communication/language development was selected as the area of greatest need. It was therefore the intention of

selected as the area of greatest need. It was therefore the intention of Citywide Programs to provide 89-313 students with a personal communication system appropriate to their functional levels and needs.

The program included a coordinator who was a teacher of special education and was assigned to the central headquarters of the Board of Education. It was the coordinator's responsibility to arrange for the provision of supplies and equipment for 89-313 students in addition to staff development for classroom teachers. A paraprofessional was provided to work with students, parents, and staff at the School for the Deaf to create videotapes and to help develop individual student goals in the area of language development. Two teacher trainers were initially involved; there were three as of February. They provided instruction and support to classroom teachers of 89-313 eligible students in Track IV and Centers for the Multiple Handicapped, Teacher Moms, Autistic, School for Language and Hearing Impaired, Schools for Career Development, Adult Skills Training Centers, and Occupational Training Centers. The supplies, materials, and equipment that were supported with P.L. 89-313 funds were selected to match the I.E.P. objectives for each student.

Fifty-nine percent of the eligible students began to receive the services of the program during the fall; the majority of the others were served by February. Although most students had received some services by the time this report was written, implementation at some sites was not complete due to late delivery of materials and equipment.

Training

By April 30, two teacher trainers reported that they had provided 450

hours of support to 601 classroom teachers at 39 Citywide Program sites. They helped select equipment, aided with its purchase, and provided instruction in its use.

According to information gathered in interviews, one teacher trainer provided training to teachers of P.L. 89-313 eligible children at Track IV and CMHC sites. She focused on daily living, speech, language, and communication skills. In addition to making resources available to the teachers, this teacher trainer provided information on augmentative communication systems, helped develop personal communication systems for each student, and aided in the integration of communication activities with student needs as stated in the I.E.P.s.

One teacher trainer provided instructional support to teachers of students in sites comprising Schools for Career Development and Adult Skills Training Centers. He instructed teachers in the use of the Instructional Management Systems Taxonomy of Career Education/Pre-vocational Skills and in the use of the D.S.E. Pre-vocational Skills Handbook for Students in Special Education.

One teacher trainer provided services to teachers in the Autistic and Teacher Moms programs, and for Speech, Language, and Hearing Impaired classes (SLHIC). She focused on improving the teaching of communication skills through reading, writing, and technology.

All three teacher trainers reported that they integrated services with on-going special education programs by conducting workshops with special education staff. They worked with teachers on in-class management, acted as consultants on materials, equipment, and program matters, gave workshops

on materials and equipment use or on specific topics, and acted as facilitators.

Materials/Equipment

Eligible 89-313 students were provided with almost 3,500 items in 20 major categories. On the average, almost three items were ordered for each student. Table 14 presents a frequency distribution of the categories of materials and equipment ordered by the classroom teachers of P.L. 89-313 eligible students. Most frequently, they ordered pre-vocational supplies (17.3 percent of the total items ordered). Next in frequency was audio-visual hardware (12.1 percent). These two categories had also been the most popular in the 1983-84 program cycle. Physical education equipment, arts and crafts materials, and office machines and equipment were more popular in the current cycle than they had been previously. Two new categories were added in the 1984-85 cycle: computer hardware and augmentative communication equipment. These two categories support the stated emphasis on communication in the current program.

Eighty-six percent of the classroom teachers interviewed said that they had received equipment and supplies during the 1984-85 academic year. Selection of materials was made, at least partly, by the teachers in over one-half of the cases. The supplies and equipment were reported as being accessible to the involved teachers: 72 percent kept them in the classroom itself.

Of the materials and equipment received, teachers reported that the following were the most helpful: pre-vocational items such as attainment kits and assembly kits, communication items such as language masters and

Table 14

Numbers and Relative Percentages of Materials/Equipment Purchased for Citywide Services (Component 2)

Categories	Number	Relative Percent[a]
Pre-vocational/Vocational Supplies	604	17.3
Audio-Visual Hardware	422	12.1
Physical Education Equipment	413	11.8
Arts and Crafts Materials	305	8.7
Office Machines and Equipment	279	8.0
Speech/Language Materials	176	5.0
General Supplies	162	4.6
Other Materials or Equipment	155	4.4
Appliances	130	3.7
Perceptual Motor Materials	123	3.5
Math Materials	107	3.1
Sensory Development Materials	103	2.9
Records/Tapes	95	2.7
Personal Hygiene Supplies	91	2.6
Music/Dance Equipment	89	2.5
Reading Program Materials	80	2.3
Computer Hardware	62	1.8
Augmentative Communication Equipment	62	1.8
Science Materials	24	0.7
Guidance Materials	12	0.3
	3,494	99.8[b]

[a]Percentage of all materials/equipment.

[b]Total does not equal 100 percent because of rounding.

- Materials and equipment in 20 different categories were purchased indicating that deliberate attention was paid to individual needs.

electronic materials, motor-sensory "hands-on" materials, activities of daily living materials, computer software, and arts materials.

The fact that items in many different categories were deemed to be useful supports the contention that the materials and equipment ordered for P.L. 89-313 children were selected with their diverse needs in mind. Since the emphasis in the current cycle was on communication, it should be noted that many types of equipment and materials, e.g. computers, language masters, audio-visual equipment, print materials, and electronics materials were intended to aid the development of such skills on all levels of sophistication. The types of communication skills taught and the way in which instruction proceeded depended upon the group receiving such instruction. Students in Teacher Moms, for example, worked on the development of functional communication, frequently utilizing computer-assisted instruction. Individuals in Centers for Multiple Handicapped used a great deal of technology, often in the development of augmentative communication skills. Students in Occupational Training Centers were being exposed to communication skills while they learned vocational skills. Videos were planned for deaf children learning how to sign.

PERCEIVED EFFECTIVENESS OF ACTIVITIES

Facilitating Activities

Component 2 was successfully implemented; materials and equipment purchased through the P.L. 89-313 program were appropriate for the students and helped them achieve their instructional objectives. The teachers reported that the supplies and equipment helped the 89-313 pupils increase their skills. Eighty-four percent noted improved pre-vocational skills;

a similar percentage noted enhanced communication skills; fifty-nine percent stated that skills in the activities of daily living had been developed. All principals and teachers questioned liked the materials they had received and reported that the students had benefited from them. All respondents stated that the materials could not have been acquired without 89-313 funds.

Inhibiting Factors

Teachers reported that they would have liked to have received equipment sooner. Principals claimed that it was difficult, at times, to get eligible students into the 89-313 data bank; therefore, many students thought to be eligible were under-served. An inhibiting factor factor to the total success of Component 2 of P.L. 89-313 was that some teachers had received no teacher-trainer services. In addition, some teachers stated that training was insufficient, generally because children had more than one handicapping condition and thus had very diverse needs. One additional factor mentioned as a detraction from the program was that the ordering process was difficult and complex.

ACHIEVEMENT DATA

The Behavioral Characteristics Progression (B.C.P.), the Track IV In-Depth Analysis, and the Career Education/Pre-vocational Skills Assessment Inventory were administered to measure students' skill mastery. The criterion for accomplishment of the program objective was as follows:

- Eighty percent of participating students will demonstrate mastery of a minimum of three new skills and 50 percent will demonstrate mastery of a minimum of six new skills consistent with each student's I.E.P. short-term objectives in

one or more of the following curriculum areas: activities of daily living; career education; and communication/language development.

Mastery of skills or improvement in each of the three curriculum areas was measured by either a single instrument or by a combination of instruments as follows: Activities of daily living skills were assessed with B.C.P. strands 3-10, 23, and 24, or with Track IV component areas 2 and 6. Language development growth was measured with B.C.P. strands 18-22, 30, 46, 48, 57, and 58, or by Track IV component area 4. Career education mastery was gauged with B.C.P. strands 25, 26, 33, 39, and 42-45, Track IV component area 8, and Career Education/Pre-vocational Skills Assessment Inventory.

As with Component 1, only the performance data from those students who had attended at least 20 sessions were included. In addition, attainment of the three-objective criterion was based only upon data from students who had attempted at least three objectives, and attainment of the six objective criterion was based only upon data from students who had attempted at least six objectives. Data specifically chosen from each of the three assessment devices were examined. Only those objectives specified in the three curriculum areas stated in the program objective were included in the analysis.

B.C.P. Skill Objectives

The data from the B.C.P. are presented in Tables 15 and 16. Over 85 percent of students taught at least three skills mastered them. Thus the program objective was attained. Fifty-six percent of students attempting to master at least six new skills were successful, again indicating attainment of the program objective.

Table 15

Frequency Distribution of Mastery of B.C.P. Objectives[a]
by Component 2 Students Undertaking at
Least Three Objectives
(N = 568)

Number of Skills Mastered	Number of Students	Percent of Population[b]	Cumulative Percent
12	12	2.1	2.1
11	5	0.9	3.0
10	21	3.7	6.7
9	23	4.0	10.7
8	16	2.8	13.6
7	20	3.5	17.1
6	72	12.7	30.0
5	67	11.8	41.5
4	100	17.6	59.2
3	150	26.4	85.6
2	46	8.1	93.7
1	18	3.2	96.8
0	18	3.2	100.0
		100.0	

[a]B.C.P. objectives in the areas of activities of daily living, communicatio/language development, career education.

[b]Baseline comprised of Component 2 students taught at least three new skills.

- At least three objectives were mastered by more than 85 percent of the students.

Table 16

Frequency Distribution of Mastery of B.C.P. Objectives[a]
by Component 2 Students Undertaking at
Least Six Objectives
(N = 302)

Number of Skills Mastered	Number of Students	Percent of Population[b]	Cumulative Percent
12	12	4.0	4.0
11	5	1.6	5.6
10	21	7.0	12.6
9	23	7.6	20.2
8	16	5.3	25.5
7	20	6.6	32.1
6	72	23.8	55.9
5	47	15.6	71.5
4	57	18.9	90.4
3	21	7.0	97.4
2	5	1.6	99.0
1	0	0	99.0
0	3	1.0	100.0
		100.0	

[a]B.C.P. objectives in the areas of activities of daily living, communication/language development, career education.

[b]Baseline comprised of Component 2 students taught at least six new skills.

- At least six objectives were mastered by almost 56 percent of the students.

Track IV In-Depth Analysis Objectives

Since it appears that those students who attempted to improve in at least three areas on the Track IV In-Dept Analysis also attempted to improve in at least six, the data for both parts of the objective are presented in Table 17. Almost 74 percent of the students showed improvement in at least three areas and over 15 percent showed improvement in at least six. Neither part of the criterion was therefore met. Students showed improvement in an average of three areas. It is possible that further training for teachers in the use of the Track IV In-Depth Analysis is indicated.

Career Education/Pre-vocational Skills Assessment Inventory Objectives

The Career Education/Pre-vocational Skills Assessment Inventory analysis showed that in the three-objective minimum group, almost 86 percent of the students mastered at least three skills. This is presented in Table 18. In the six-objective minimum group, almost 75 percent of the students mastered at least six new skills as shown in Table 19. Both parts of the objective criterion were thus satisfied.

Overall Attainment

The total effect of the supplementary materials and equipment as well as the training provided by P.L. 89-313 were examined in a number of ways. First, the total objectives within the three curriculum areas mastered by all students who had attended at least 20 sessions were counted. As shown in Table 20, the average number of program objectives mastered by each student was 3.2. Over 88 percent of the students mastered at least one objective. Over 47 percent mastered three; over 16 percent mastered

Table 17

Frequency Distribution of Mastery of Track IV In-Depth Analysis Objectives[a] by Component 2 Students Undertaking at Least Three and at Least Six Objectives (N = 298)

Number of Skills Mastered	Number of Students	Percent of Population[b]	Cumulative Percent
9	1	0.3	0.3
8	2	0.7	1.0
7	19	6.4	7.4
6	24	8.0	15.4
5	25	8.4	23.8
4	20	6.7	30.5
3	86	28.9	59.4
2	43	14.4	73.8
1	48	16.1	89.9
0	30	10.1	100.0
		100.0	

[a]Track IV objectives in the areas of activities of daily living, communication/language development, career education.

[b]Baseline comprised of Component 2 students taught at least three new skills.

- At least three objectives were mastered by over 59 percent of the students.
- At least six objectives were mastered by over 15 percent of the students.

Table 18

Frequency Distribution of Mastery of Career/Pre-vocational Education Objectives[a] by Component 2 Students Undertaking at Least Three Objectives (N = 298)

Number of Skills Mastered	Number of Students	Percent of Population[b]	Cumulative Percent
12	31	16.8	16.8
11	9	4.9	21.7
10	24	13.0	34.8
9	3	1.6	36.4
8	7	3.8	40.2
7	7	3.8	44.0
6	28	15.2	59.2
5	24	13.0	72.3
4	14	7.6	79.9
3	11	6.0	85.9
2	7	3.8	89.7
1	3	1.6	91.3
0	16	9.0	100.0
		100.1[c]	

[a]Career objectives from career education/pre-vocational skills assessment Inventory.

[b]Baseline comprised of Component 2 students taught at least three new skills.

[c]Total does not equal 100 percent because of rounding.

- At least three objectives were mastered by almost 86 percent of the students.

Table 19

Frequency Distribution of Mastery of Career/Pre-vocational Education Objectives[a] by Component 2 Students Undertaking at Least Six Objectives
(N = 298)

Number of Skills Mastered	Number of Students	Percent of Population[b]	Cumulative Percent
12	31	21.2	21.2
11	9	6.2	27.4
10	24	16.4	43.8
9	3	2.1	45.9
8	7	4.8	50.7
7	7	4.8	55.5
6	28	19.2	74.6
5	10	6.8	81.5
4	8	5.5	87.0
3	2	1.4	88.4
2	4	2.7	91.1
1	0	0.0	91.1
0	13	8.9	100.0
		100.0	

[a]Career objectives from Career Education/Pre-vocational Skills Assessment Inventory.

[b]Baseline comprised of Component 2 students taught at least six new skills.

- At least six objectives were mastered by almost 75 percent of the students.

Table 20

Frequency Distribution of Total Objectives[a] Mastered in All Areas by Component 2 Students Who Attended at Least Twenty Sessions (N = 1039)

Number of Skills Mastered	Number of Students	Percent of Population[b]	Cumulative Percent
12	41	3.9	3.9
11	5	0.5	4.4
10	20	1.9	6.4
9	7	0.7	7.0
8	20	1.9	9.0
7	18	1.7	10.7
6	59	5.7	16.4
5	62	6.0	22.3
4	87	8.4	30.7
3	175	16.8	47.5
2	217	20.9	68.4
1	205	19.7	88.2
0	123	11.8	100.0
		99.9[c]	

[a]All objectives in areas of activities of daily living, communication/language development, career education.

[b]Baseline comprised of Component 2 students for whom data were reported in any curriculum area.

[c]Total does not equal 100 percent because of rounding.

- At least three objectives in any academic area were attained by 47.5 percent of the students.
- At least six objectives in any academic area were attained by over 16 percent of the students.

Table 21

Frequency Distribution of Total Objectives[a] Mastered in All Areas by Component 2 Students Undertaking at Least Three Objectives (N = 310)

Number of Skills Mastered	Number of Students	Percent of Population[b]	Cumulative Percent
12	41	13.2	13.2
11	5	1.6	14.8
10	20	6.5	21.3
9	2	0.6	21.9
8	7	2.3	24.2
7	6	1.9	26.1
6	28	9.0	35.2
5	26	8.4	43.5
4	16	5.2	48.7
3	41	13.2	61.9
2	72	23.2	85.2
1	30	9.7	94.8
0	16	5.2	100.0
		100.0	

[a]All objectives in areas of activities of daily living, communication/language development, career education.

[b]Baseline comprised of Component 2 students taught at least three skills in any curriculum area.

- At least three objectives in any academic area were attained by almost 62 percent of the students.

six. These data, it must be recognized, are gathered from all students, not only from those for whom a specified number of objectives were proposed. For students who were taught at least three new skills, just under 62 percent did master at least three. (See Table 21.) The criterion that 80 percent of the studets would attain three new skills was not reached. The average total number of objectives mastered by these students was five. It should be noted that the three-skill criterion of the overall objective was not met in spite of the fact that it was met when using two of the individual instruments. It is possible that the effect of the Track IV In-Depth Analysis, on which the program objective was not attained, was to lower the percentage of students mastering a minimum of three new skills. For the 147 students having at least six objectives to attain, approximately 74 percent were able to do so, as shown in Table 22. In this case the criterion of 50 percent of the students mastering at least six new skills was reached.

From the data gathered on student achievement, it was clear that students acquired new skills in all program areas although they appeared to be more successful in some curriculum areas (career education) than in others (activities of daily living and communication/language development). Certain instruments (B.C.P., Career/Pre-vocational Skills Assessment Inventory) showed greater student gains than others (Track IV In-Depth Analysis). Even in those cases where the program objective was not met, sizeable student gains were in evidence in the majority of analyses performed.

Table 22

Frequency Distribution of Total Objectives[a] Mastered in All Areas by Component 2 Students Undertaking at Least Six Objectives (N = 147)

Number of Skills Mastered	Number of Students	Percent of Population[b]	Cumulative Percent
12	41	27.9	27.9
11	5	3.4	31.3
10	20	13.6	44.9
9	2	1.4	46.2
8	7	4.8	51.0
7	6	4.1	55.1
6	28	19.0	74.1
5	11	7.5	81.6
4	8	5.4	87.1
3	2	1.4	88.4
2	4	2.7	91.2
1	0	0.0	91.2
0	13	8.8	100.0
		100.0	

[a]All objectives in areas of activities of daily living, communication/language development, career education.

[b]Baseline comprised of Component 2 students taught at least three skills in any curriculum area.

- At least six objectives in any academic area were attained by over 74 percent of the students.

V. CONCLUSIONS AND RECOMMENDATIONS

Analysis of the data collected in the evaluation of the two components of P.L. 89-313 indicated that while attainment of program objectives varied by component and by curriculum area within each component, program objectives were generally attained. Almost 92 percent of the 1,698 students who attended a minimum of 20 sessions (out of a total of 1,931 students for whom there were data retrieval forms) acquired skills in at least one of the following curriculum areas: reduction of maladaptive behavior, societal/survival skills; communication/language development; activities of daily living; career/pre-vocational education; reading; mathematics. The average number of skills mastered by students attending at least 20 sessions was 6.7. Interviews and observations indicated that, in almost all cases, program services met the individual needs of the students and the materials, equipment, and training provided by P.L. 89-313 funds effectively supplemented the basic instructional activities of program-eligible students.

Compared with the 1983-84 program, Components 1 and 2 of the 1984-85 program served approximately 16 percent more students and provided 16 percent more supplementary materials and equipment. While there were more staff in the previous cycle, there were also more components. Two of the components of the 1983-84 program cycle were replicated in 1984-85, with similar numbers of program staff in the replicated components. As before, most of the staff were teacher trainers whose primary responsibilities were to assist in the selection and use of program purchased materials and equipment, provide consultation, conduct in-class demonstrations and workshops, and ultimately to enable teachers to better individualize instruction. Teacher trainers

worked with the teachers of program-eligible students individually and in small and large groups.

The data analysis carried out in the 1983-84 and 1984-85 program cycles were not identical. Data were selected differently, using specific objective minimums for inclusion in the analyses. However, since two of the components were replicated, it was possible to compare some aspects of student performance. Component 1, the Regional Instructional Support Unit, served at least 659 students for whom there were completed data retrieval forms. This was about 100 fewer students than were reported in the previous cycle. Unlike what occurred in the previous cycle, the program objective was fully attained. Mean student mastery dropped from 12.1 skills in the last year to 9.7 this year, although students were evaluated in fewer curriculum areas due to the deletion of the activities of daily living objective. The percent of students mastering at least one new skill was 94 in 1983-84 and 95 in 1984-85. If total objectives mastered are calculated along with component objectives, the mean number of objectives mastered is 10.1.

Component 2, Citywide Services Instructional Supplies and Equipment, served almost 400 more students than it did last year and provided almost 50 percent more materials and equipment. As in the previous cycle, the current program partially attained its objectives. When assessing the average total number of skills mastered by individual students, this mean number increased from 4.1 in 1983-84 to 4.6 in 1984-85. One alteration in Component 2 was the increased emphasis on technology and the greater use of computer-assisted instruction with the program participants.

In the current program cycle, both components suffered from some limitations, specifically identification and tracking of students via the data bank, delays in acquisition of materials and equipment, some inefficiency in ordering, and occasionally too little input by teachers into the selection of materials and equipment.

The conclusions, based upon the findings of this evaluation, lead to the following recommendations:

- To guarantee that services are provided in the most propitious manner, efforts should be made to improve the identification and tracking of program-eligible students.
- There should be more extensive communication between the central administration of P.L. 89-313 and the program sites.
- Efforts to involve teaching and support staff in the selection of materials and equipment should be maintained and augmented.
- Where existing materials have been judged to be less than completely satisfactory, a concerted effort should be made to find and review alternate materials.
- To guarantee that purchased materials and equipment are used in the best possible way, a greater sharing of knowledge based on experience among personnel at different sites should be employed.
- To ensure continued effectiveness in the teacher training aspect of the program, participant evaluation of workshops and other training activities should be expanded.

II. PROJECT PARTICIPANT INFORMATION

TYPE OF HANDICAPPING CONDITION

Children Participating Age	Mentally Retarded	Autistic	Specific Learning Disabled	Emotionally Disturbed	Physically Handicapped (Orthopedic)	Other Health Impaired	Visually Handicapped: Legally Blind	Visually Handicapped: Partially Sighted	Deaf	Hard of Hearing	Deaf & Blind	Speech Impaired	Multiple Handicapped	Total
	Number of Children Participating by Type of Handicap													
01. Preschool 0-2 Yr.														
02. School Age 3-5 Yr.														
03. 5-17 Yr.	381	105	177	262	101	121		8	4	7		14	254	1,434
04. 18-20 Yr.	243	23	0	47	0	28		0	17	1		0	78	437
05. Total (Sum lines 1-4)	624	128	177	309	101	149		8	21	8		14	332	1,871

Information was received on 60 additional students, aged 21 to 22 (having turned 22 during the academic year) and were therefore do not appear on this table.

III. PROJECT PARTICIPANT ACHIEVEMENT INFORMATION

Indicate in column "A" the number of pupils actually serviced in each curriculum area. In column "B" indicate the number of pupils who met 75% of their objectives in each of the curriculum areas. Use the following example in completing the table below. A school district proposed that 20 children would be instructed in socialization skills. However, 18 children were actually instructed. Out of the 18 children instructed, 12 of them met 75% of their objectives in socialization. Example:

Code	Curriculum Area	A	B
07	Socialization	18	12

Code	Curriculum Area	Number of Pupils A	Number of Pupils B
	CULTURAL ENRICHMENT		
01	Music		
02	Arts/Crafts		
03	Drama		
04	Dance		
05	Other Cultural Studies		
	AFFECTIVE AREA		
06	Maladaptive Behavior Extinction/Emotional Control	38	21
07	Socialization		
	INDEPENDENT LIVING SKILLS		
08	Personal Hygiene/Health Care (Activities of Daily Living)	106	30
09	Societal/Survival	47	30

Code	Curriculum Area	Number of Pupils A	Number of Pupils B
	ACADEMIC SKILLS		
10	Readiness (Reading and Mathematics)		
11	General Cognitive Readiness		
12	Reading	396	383
13	Mathematics	387	360
14	Science		
15	Social Studies		
16	English Language Arts/ Spelling/Writing		
17	English as a Second Language (ESL)		
18	Speech (Processes and Correction)		
19	Communication/Language Development (Verbal and Nonverbal)	1253	463

Code	Curriculum Area	Number of Pupils A	Number of Pupils B
	HEALTH, PHYS ED & RECREATION		
20	Physical Education		
21	Drug Education		
22	Family and Sex Education		
23	Leisure Activities and Pursuits		
24	SENSORY AND MOTOR DEV. Auditory (Perception & Processing)		
25	Visual (Perception & Processing)		
26	Motor Development		
27	Other Sensory Development		
	VOC./OCC. EDUCATION		
28	Career Education	508	420
29	Domestic Arts (Home Economics, Industrial Arts)		
30	Vocational/Occupational/Workshop/ Work Activities/Work Study		

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